

Constant of Proportionality:

TABLES, GRAPHS, AND EQUATIONS

In a proportional relationship, the **constant of proportionality**, also known as the unit rate, is the ratio of y to x . It can be represented by the variable k .



Directions:

Determine the constant of proportionality for each proportional relationship below. Write your answer on the line.

1. This table shows the proportional relationship between the tablespoons of vinegar, x , and the tablespoons of oil, y , that Paul mixed together to make salad dressing.

x	1	2	3	5
y	3	6	9	15

$k = \underline{\quad 3 \quad}$

2. This equation shows the proportional relationship between the time (in hours) spent sailing, x , and the distance (in miles) that the Parker family traveled from shore, y .

$y = 6x$

$k = \underline{\quad 6 \quad}$

3. This equation shows the proportional relationship between the number of doughnuts in each box at Bluebird Bakery, x , and the total number of doughnuts, y .

$y = 12x$

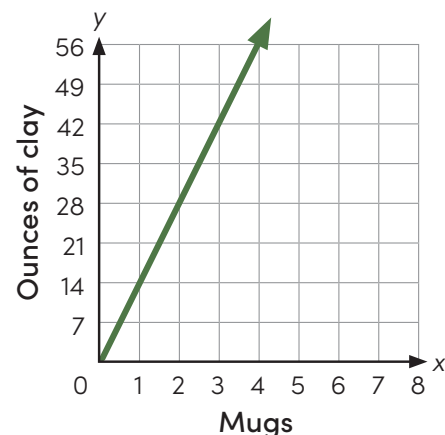
$k = \underline{\quad 12 \quad}$

4. This table shows the proportional relationship between the number of hours Josiah worked, x , and the number of dollars he earned, y .

x	2	4	6	10
y	\$30	\$60	\$90	\$150

$k = \underline{\quad 15 \quad}$

5. This graph shows the proportional relationship between the number of mugs Julia makes, x , and the amount of clay she uses (in ounces), y .



$k = \underline{\quad 14 \quad}$

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Keep going!

Determine the constant of proportionality for each proportional relationship below. Write your answer on the line, and simplify any fractions.

- 6.** This equation shows the proportional relationship between the cups of water, x , and the cups of flour, y , that Clara combined to make bread dough.

$$y = \frac{5}{3}x$$

$k = \underline{\frac{5}{3}}$

- 7.** This table shows the proportional relationship between the number of juice bottles purchased, x , and the total cost of the purchase, y .

x	3	9	21	24
y	\$5.25	\$15.75	\$36.75	\$42

$k = \underline{1.75}$

- 8.** This table shows the proportional relationship between the amount of time (in hours) that it snowed yesterday, x , and the amount of snow (in inches) that fell, y .

x	2	3	6	9
y	1	1.5	3	4.5

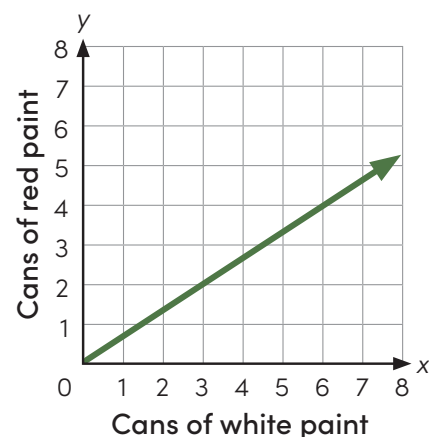
$k = \underline{0.5}$

- 9.** This equation shows the proportional relationship between the distance (in miles) Tracy rides her motorcycle, x , and the amount of gas (in gallons) she uses, y .

$$y = 36.5x$$

$k = \underline{36.5}$

- 10.** This graph shows the proportional relationship between the number of cans of white paint, x , and the number of cans of red paint, y , Samir mixed together to create pink paint.



$k = \underline{\frac{2}{3}}$